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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,613	01/10/2002	Kwan Yeul Cho	0630-1403P	5085
2292	7590	02/18/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			NGUYEN, HANH N	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/041,613

Applicant(s)

CHO ET AL.

Examiner

Nguyen N Hanh

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amenments filed on 11/10/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12,13,15-35 and 37-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12,13,15-28 and 37-43 is/are allowed.
- 6) ☒ Claim(s) 29-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Remarks

1. In view of amendments, the Examiner withdraws the objections to claims 12,13,15-28; the rejection under 35 U.S.C 112, first paragraph, to claims 29-35 and the rejection under 35 U.S.C 103(a) to claims 37-42.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

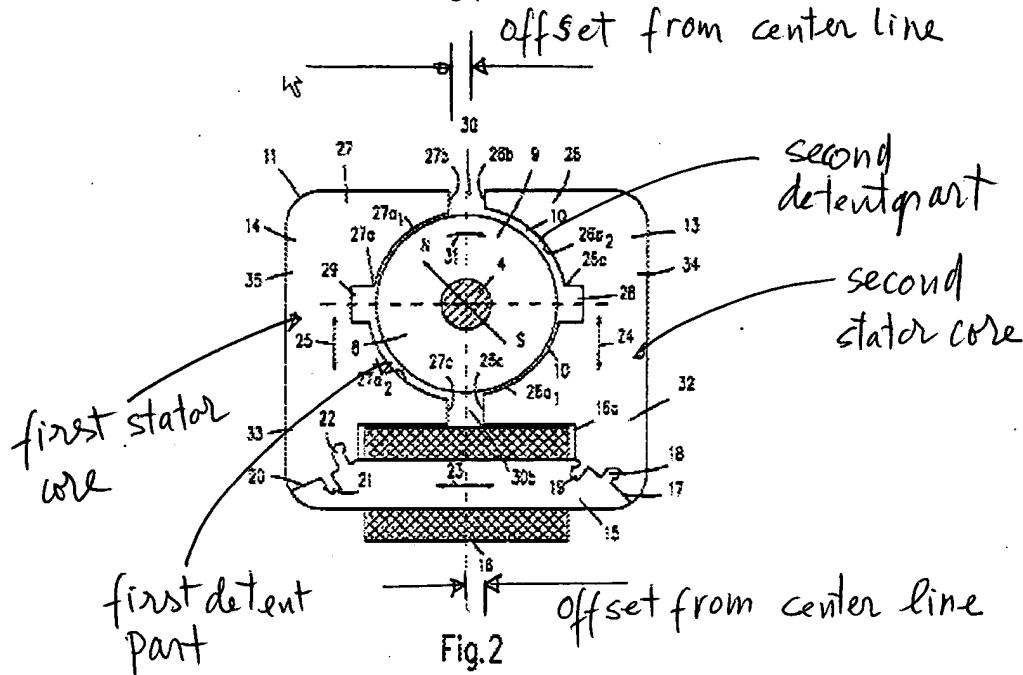
2. Claims 29 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Ackermann et al.

Regarding claim 29, Ackermann et al. disclose a skeleton type brushless motor (preamble, patentable weight not given) comprising: a rotor (9 in Fig. 2) having a rotational shaft (4) in a center thereof; and a first stator core (27) having a first rotor receiving part (27a1) formed therein for receiving the rotor; a second stator core (32) having a second rotor receiving part (26a1) formed therein for receiving the rotor; first and second separate spaces formed between the first and second stator cores, respectively; a coil winding unit (15) connected to the first and second stator cores; and a coil (16) wound on the coil winding unit; wherein one end of the first rotor receiving part near the first separate space (27b) and an opposite end of the second rotor receiving part (26c) near the second separate space are offset from a vertical center line of the motor respectively (see markups in Fig. 2).

Regarding claim 35, Ackermann et al. also disclose a skeleton type brushless motor wherein a pair of detent parts, having larger radius from the rotational shaft than

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radii of the first and second rotor receiving parts, are formed around each one end of the first and second rotor receiving parts in a rotational direction of the rotational



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ackermann et al. in view of Church et al.

Regarding claim 30, Ackermann et al. show all limitations of the claimed invention except showing the motor further comprising: a pair of nonconductive separation members, each separation member respectively being inserted between the stator cores and one of the shaft support parts and receiving a part of the rotor protruded from the stator cores.

However, Church et al. disclose the motor further comprising: a pair of non conductive separation members (32 in Fig. 2 and 7), each separation member respectively being inserted between the stator cores and one of the shaft support parts and receiving a part of the rotor protruded from the stator cores for the purpose of fixing the rotor.

Since Ackermann et al. and Church et al. are in the same field of endeavor, the purpose disclosed by Church et al. would have been recognized in the pertinent art of Hayashi.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Ackermann et al. by using a pair of nonconductive separation members, each separation member respectively being inserted between the stator cores and one of the shaft support parts and receiving a

part of the rotor protruded from the stator cores as taught by Church et al. for the purpose of fixing the rotor.

Regarding claim 31, Church et al. also show a tab (66) to cover the stator core for the purpose of protecting the stator.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Ackermann et al. by using a cover on one of the separation member for covering the first and the second separate space for the purpose of protecting the stator.

4. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ackermann et al. in view of Jeske.

Regarding claim 32, Ackermann et al. show all limitations of the claimed invention except showing motor further comprising: a sensor for sensing a rotational position of the rotor is positioned around 10-20° from the symmetry line nearer to the coil winding unit in a direction opposite to a rotational direction of the rotor.

However, Jeske discloses motor further comprising: a sensor (14 in Fig. 2) for sensing a rotational position of said rotor, wherein said sensor is located approximately 10 to 20 degrees from the centerline in vertical direction and on opposite direction of rotation (Col. 3, lines 17-25) for the purpose of optimizing the motor efficiency.

Since Ackermann et al. and Jeske are in the same field of endeavor, the purpose disclosed by Jeski would have been recognized in the pertinent art of Ackermann et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Ackermann et al. by using a sensor for

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sensing a rotational position of the rotor is positioned around 10-20° from the symmetry line nearer to the coil winding unit in a direction opposite to a rotational direction of the rotor as taught by Jeski for the purpose of optimizing the motor efficiency.

5. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ackermann et al. in view of Erdman et al.

Regarding claim 33, Ackermann et al. shows all limitations of the claimed invention except showing the motor further comprising: a PCB formed with a drive control circuit, and connected to the coil winding unit in a direction of the rotational shaft.

However, Erdman et al. disclose a motor structure further comprising a PCB (circuit board 336 in Fig. 2 and Col. 9, lines 1-5) formed with a drive control circuit, and connected to the coil winding unit in a direction of the rotational shaft for the purpose of controlling the motor.

Since Ackermann et al. and Erdman et al. are in the same field of endeavor, the purpose disclosed by Erdman et al. would have been recognized in the pertinent art of Ackermann et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Ackermann et al. by using a PCB formed with a drive control circuit, and connected to the coil winding unit in a direction of the rotational shaft as taught by Erdman et al. for the purpose of controlling the motor.

Regarding claim 34, Erdman et al. also show the motor wherein the PCB includes an AC capacitor connected to utility power for decreasing a voltage of the utility power, and a rectification circuit for rectifying the utility power (Col. 17, lines 39-50).

Allowable Subject Matter

6. Claims 12,13,15-28 and 37-43 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 12, the prior art of record does not show a skeleton type brushless motor comprising: a rotor having a shaft in a center thereof; a first stator core including a first semicircular inner profile, a second stator core including a second semicircular inner profile wherein said second semicircular inner profile faces to said first semicircular inner profile and a first separation space exists between said first stator core and said second stator core, and a second separation space exists between said first stator core and said second stator core at an opposite side; wherein outer profiles of said first stator core and the second stator core near the first separation space or the second separation space, protrude outwardly away from said rotational shaft as said outer profiles progress toward the end of the first stator core or the second stator core.

Regarding claim 15, the prior art of record does not show a skeleton type brushless motor comprising a rotor having a shaft in a center thereof; a first stator core having a first rotor receiving part, a second stator core having a second rotor receiving part; first and second gaps formed between the first and second stator core respectively; a pair of shaft support parts rotatably supporting the rotational shaft on both sides of the stator cores; and a pair of nonconductive separation members, said separation members being inserted between and contacting the stator cores and respective ones

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of the shaft support parts and receiving a part of the rotor protruded from the stator cores.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Information on How to Contact USPTO

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (571) 272-2031. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Burton Mullins can be reached on (571) 272-2029. The fax phone numbers

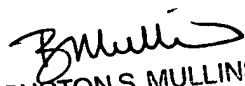
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for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1782.

HNN

February 4, 2004


BURTON S. MULLINS
PRIMARY EXAMINER